

Remarks

Independent claims 1, 8, 17 and 18 have been amended to emphasize that the gas filter is for removing oil from a gas. Claims 1 and 8 have also been amended to emphasize the structure which causes the gas to pass initially through the first filtration material of glass paper and subsequently through the second filtration material, a preexisting limitation apparently overlooked by the examiner in relation to those claims but recognized in relation to claims 15-18.

New, respectively dependent, claims 19 to 22 directed to the pore diameter of the first filtration material being between 5 μm and 20 μm , have been added, basis for the latter amendment being in the description of the first and second embodiments in the passage of the specification extending from Page 9, last two paragraphs through page 10, first paragraph.

The examiner's withdrawal of all prior references is noted.

In contending the rejection of claims 1-4, 6-11, 13 and 14 under 35 USC 102 as anticipated by Pieciak, it is pointed out that the primary reference does not teach the respective limitations of claims 1 and 8 that the inlet communicates with the inner and outer cylindrical space (of the cylindrical case), (claims 1 and 8, respectively), which space is surrounded by the inner and outer peripheral surface of the filtration portion, (claims 1 and 8, respectively) i.e. the first filtration material of glass paper (6). In contrast to the claimed invention, the primary references teaches that inlet (23) communicates with the outer peripheral surface of the second filtration material (7) which is made of non woven fabric. Thus, according to the teaching of Pieciak, the air to be filtered passes initially through the second filtration material of non-woven fabric and subsequently through the first material of glass paper in direct contrast to the claimed structure which requires that the air pass first through the glass paper filter and subsequently through the non woven fabric.

Thus, claims 1-4, 6-11, 13 and 14 cannot be considered to be anticipated by Pieciak and the rejection is inappropriate.

In rejecting claims 15-18 under 35 USC 103 as being unpatentable over the primary reference in view of Shimoda et al, the examiner asserts that "Shimoda et al discloses a multilayered nonwoven filtration material (3) wherein the pore diameter of the second filtration material (2c) is larger than the pore diameter of the first filtration material (2b) or the larger pore diameter material is on the exit" and, that "it would have been obvious to a person having ordinary skill in the art at the time the invention was made to provide a filtration material with the wetting ability as taught by Shimoda et al in the filter apparatus of Pieciak since the larger diameter pore would not only improve efficiency of oil mist from gas but also improve corrosion resistance without compromising the performance of pressure loss."

It is pointed out that, it is well established that, in rejecting a claim on the grounds of obviousness over a proposed combination/substitution of elements of two references, it is improper to disregard the teachings of each of the two references each considered separately as a whole.

In the present case, as clearly disclosed in the 'SUMMARY OF INVENTION', the teaching of the primary reference, Pieciak, properly considered as a whole is directed to the provision of a filter for separating fluids, for example, oil from an oil and compressed air mixture by utilizing using a glass fiber paper, and, in particular, for providing adequate physical support for the glass fiber paper. In contrast, the teaching of the secondary reference, Shimoda, considered properly as a whole is directed to separating solid particulates (not fluids) from exhaust gases and particularly to the improvement of the corrosion properties of a filter made of metal fabric, (not glass paper), by making fiber diameters (not pores) on a gas inlet of the metallic filter material larger than the fibers at a central part of the thickness direction.

Thus, clearly, the whole teaching of the secondary reference is directed to a different and incompatible purpose than the teaching of the primary reference with different technical problems solved. The technician seeking a solution to improve the teaching of the primary reference would not, therefore, be motivated to address the different and distinct teaching of the secondary reference for the solution.

The technical problem of trapping of solid particles by a filter, as addressed by Shimoda could not be predicted as analogous to the problem of trapping fluid droplets addressed by the primary reference (and the claimed invention)

For example, the function of 'wetting' occurs only in liquid droplets, not in solid particles for which Shimoda filtration material is designed.

The glass paper filtration material taught by both the primary reference and the claimed invention is not subject to corrosion in contrast to the metal filtration material specified for use in an exhaust gas environment as taught by the secondary reference. The man of ordinary skill in the art of filtering oil from gas would not be motivated to address the teaching of the secondary reference to obtain a solution for corrosion resistance, as no such corrosion arises with the glass paper.

Furthermore, as pointed out above, the secondary reference teaches merely that the fibers should have a large diameter - it does not specifically address pore size. The secondary reference also states that, in general, although increasing fiber diameter increases corrosion resistance, increasing fiber diameter also increases pressure loss through the filter and specifically directs, on lines 66-67 of col 2 in the summary of invention that the larger diameter fibers should be on the surface part (of the gas inlet side - see also col 1, lines 40-44) to improve corrosion resistance without compromising pressure loss.

In addition, although the secondary reference also teaches that the diameters of the metal fibers at the outlet side can be similarly larger than the metal fibers at the center, as are those at the inlet side, that is explained on lines 16-18 of column 2, to be merely a matter of manufacturing convenience, without comprehension of the claimed invention.

Therefore, even if addressed by the technician, the teaching of the secondary reference would direct the technician away from the teaching of the claimed invention.

Thus, it is applicants' position that the documentary evidence shows that the technician would not be motivated to address the teaching of the secondary reference properly, considered as a whole, for a solution to improve the teaching of the primary reference, properly considered as a whole. The only motivation for the isolation of an element in the secondary reference and substitution in the primary

reference could have arisen from impermissible hindsight analysis by the examiner having already seen the solution provided by the claimed invention, which amounts to inadmissible mosaicing.

As pointed out above, even if such improper substitution were attempted, the claimed invention would not result from the substitution attempted by the examiner. The examiner's assertion that it would be obvious to provide a filtration material with the wetting ability as taught by the secondary reference in the filter apparatus of the primary reference is also unconvincing as, *inter alia*, the whole teaching of the secondary reference is not concerned with filtering out a liquid but with (dry) particulate material where 'wetting' is clearly not a factor and corrosion resistance in a corrosion sensitive metal filter arising from hot exhaust gases would also not be a factor in a glass paper filter material employed to remove oil mist from gas.

Accordingly it is submitted that the examiner's rejection is inappropriate and that the claims define patentable subject matter.

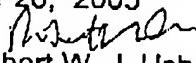
Authorization is given to deduct the small entity fees of \$ 160 in respect of four additional dependent claims, an extension of time of one month, now requested, together with any fee deficit arising from filing the attached paper, from deposit account 21-0760.

Respectfully submitted,



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This certifies that this paper is being transmitted by facsimile to Commissioner for Patents, PO box 1450, Alexandria VA 22313-1450 (1-571-273-8300) on November 28, 2005


By Robert W. J. Usher, Nov 28, 2005